

# TitleMaster

## Installation and Use Guide.

## **1. Installation and configuration.**

General information.

TitleMaster hardware-software complex is designed for superimposing computer graphics on video signal. The unique feature of the complex is the ability to work through the built-in HDMI video output of the computer, installation of additional expansion cards is not required, and therefore - you can use a laptop.

### **Computer system requirements.**

For TitleMaster program to work you need a computer with operating system Windows XP, Windows 7, Windows 8, Windows 8.1 or Windows 10. The computer must have an additional video output HDMI or DVI (in the latter case you need to use an adapter or DVI-HDMI cable).

Video adapter must provide support for DirectX 9.0c and texture size up to 2048x2048. Almost any modern video card with 256 MB memory or Intel HD integrated graphics is suitable for these requirements.

TitleMaster can work in background mode, while the computer can be used for other tasks. The main thing is that these operations should not heavily load the processor and disk and should not cause switching of screen modes. Any background actions of the operating system (including antivirus programs) can lead to synchronization failures and "jerking" of tickers.

When TitleMaster is running, it disables ClearType font smoothing mode (if it was enabled) and restores it on exit. Avoid enabling ClearType mode while the program is running.

The Windows Aero graphical user interface has a great impact on video adapter performance, so TitleMaster disables Aero on startup and restores it on exit.

### **Installing the program.**

Run the TitleMaster\_Install.exe installation program and follow the instructions. The installation program will prompt you to install the required version of DirectX. If your computer does not have an Internet connection, you can download the DirectX service pack separately:

<https://www.microsoft.com/en-us/download/details.aspx?id=8109>

The user interface of the program is available in two languages: Russian and English. The language can be changed at any time from the Settings - Language menu.

### **Connecting to a mixer.**

Connect your computer's optional HDMI output to the mixer.

You need to connect an HDMI cable to the mixer input located on the rear panel of the mixer cart, labeled INPUT HDMI TITLES. To enable the Titles mode, you need to turn off the "Titles Preview" and "Titles Program" buttons on the mixer console. The resolution of the main computer monitor can be any, for comfortable work in HD mode it is recommended to have a resolution of 1920x1080 or higher. It is better to disable the second monitor in the video adapter settings, the program will enable it itself when needed.

The first time the program is launched, it starts the initial setup wizard, which gives the user step-by-step instructions. The wizard can also be called later - from the Settings menu.

**Important:** HDMI output should work in pixel-by-pixel mode, without scaling. If distortion is present, it is likely that overscan mode is enabled in the video adapter driver settings.

Disable overscan mode for AMD/ATI video adapters in Catalyst Control Center: My Digital Flat-Panels - Scaling Options (DTV - Scaling Settings):

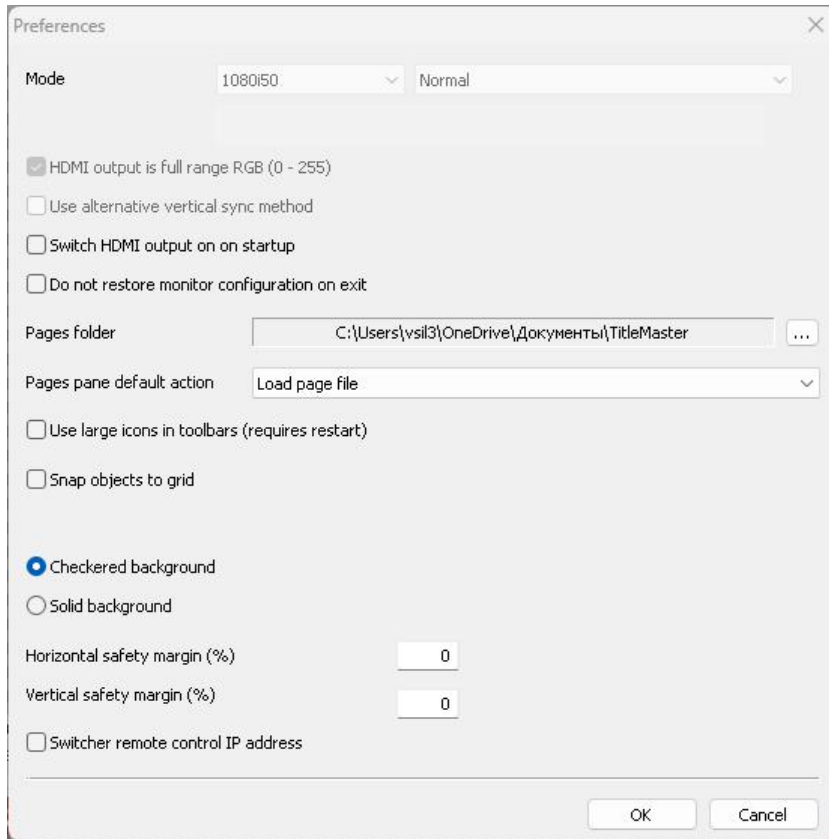


Disable overscan mode for Intel Integrated Graphics: Intel Graphics Control Panel: Advanced Mode - Display - Scaling:



## Settings.

All program settings are collected in one window. Some settings can only be changed when HDMI output is disabled and the current page in the editor is empty



**Mode** - selects the video mode in which the system operates. To change the video mode, clear the current page and disable HDMI output or preview mode. For proper operation of the complex, the video mode of the mixer must exactly match the video mode of the program!

**HDMI connection** - if your computer's video card has more than two outputs, or more than one monitor is connected to your computer, you may need to manually select the video output to which the mixer is connected.

**Full RGB signal range in HDMI (0 - 255)** - Video adapters can use one of two RGB signal standards: full (0 - 255) or limited (16 - 235). If you can change the standard in the video adapter settings, it is recommended to select full (0 - 255) and check this box. Otherwise, you need to select the desired option in the initial setup wizard.

**Use alternative mode of vertical synchronization** - for some video adapters switching this checkbox allows to avoid "jerking" of tickers.

**Enable HDMI output at program startup** - TitleMaster will enable HDMI output after startup. If a script to run at program startup is specified in the Automation dialog box - it will be loaded and start executing.

**Do not restore saved monitor configuration on exit** - TitleMaster will not disable HDMI output, the output will be a picture of an expanded Windows desktop. This checkbox will be useful if the HDMI output configuration has to be set manually.

Folder with page files - sets the path to the folder where page and script files are located. The contents of the folder are displayed in the quick access panel on the left. By default, this folder is: Documents\TitleMaster.

File selection action - selects the action that will be performed when you double-click on a page file name in the Quick Access Toolbar.

Large icons in toolbars - select the size of icons in toolbars. You must reload the program to change this option.

Bind frames to grid - if this option is enabled, changing the position and size of the frames is always done in specified increments.

Editor background - you can choose a background of a certain color or "checkerboard". This option can be useful when creating semi-transparent design elements.

Margins - you can set the margins of the safe area of the screen horizontally and vertically (in percent). On the editor screen, the margins area is shown in a darker color. The program does not prohibit the output of graphics in the margins area.

Control from the mixer console - you can set the IP address of the mixer, if you want to use the program control function from the console. You can bind playback of individual frames, groups of frames or scenarios to the buttons of the remote control.

Note: Not all settings are available when the program is in editor mode!

## 2. Working with the program.

### Program concept.

After enabling HDMI output (by pressing the F10 button, selecting the menu item or using the button on the toolbar), the program outputs a full-screen video signal of graphics with alpha channel (transparency information). The HDMI standard does not provide for transmission of transparency information, so the video signal is converted into YCbCr 4:2:2 + Alpha 8 format and transmitted instead of RGB. If such a signal is fed to a conventional monitor or TV, the picture will have distorted colors. On the receiving end, the mixer performs the inverse conversion and overlays graphics on the transmitted video signal using information about the transparency of each pixel.

The refresh rate of the screen matches the frame rate for the selected video mode, this allows you to realize smooth motion, tickers, etc.

The screen size in pixels corresponds to the selected video mode:

### Video Mode Screen Size.

HD 1080i50, 1080p50, 1080i60, 1080i59.94, 1080p60 1920x1080

HD-ready 720p50, 720p60, 720p59.94 1280x720

SD PAL 576i50, 576p50 720x576

SD NTSC 480i60, 480p60 720x480.

Graphics are placed in rectangular frames freely positioned on the screen. The number of frames is up to 256. The minimum frame size is 16x16 pixels, the maximum size is limited by the screen size. Frames can be overlapped and their mutual position can be changed. Relative transparency is taken into account.

All screen space not occupied by frames is completely transparent.

## Page files

A set of frames is saved in a page file (with a .titlemaster extension). The file contains text, images and links to external data files (TXT, RTF, CSV, image and video files). If the file is located in the same folder (or in one of the subfolders) as the page file, the relative path to it is saved. If not, the absolute path is saved. This should be taken into account when transferring files from one computer to another.

It is recommended to save all page files and used external data files in the working folder of the program (by default: Documents\TitleMaster). After installation, this folder contains examples.

## Frames

A frame consists of a background and text. Both can be absent.



Fig. Simple frame with text in the editor

The backing can be:

- A colored rectangle with adjustable transparency (0 - 100%). If the transparency is 100%, the color does not matter, there is no carpet pad.
- Image. Transparency of separate parts of the carpet pad is set by the transparency information in the image file itself.
- Animation. This is a set of images that change each other.

The background type is selected when you add a new frame and cannot be changed later.

When creating a frame from an image file, the following formats are supported:

- BMP. The BMP format does not provide storage of transparency information, but the program can generate this information itself from a pair of images - on a white and black background. The file with the image on the black background should have the following name: filename.bmp, and on the white background: filename\_w.bmp. The filename (the common part of the name) can be anything. It is enough to specify any file from the pair.
- TGA (with alpha channel, if any).
- PNG (with alpha channel, if any).
- JPG
- GIF (with transparency, if any).

Maximum number of animation frames = 1000. The carpet pad animation can be looped. The following file formats are supported for animation:

- ✓ Animated GIF (with transparency, if any). The duration of each animation frame is taken from the file itself.
- ✓ AVI (with alpha channel, if any). The duration of each frame is taken from the frame rate of the file. Only uncompressed AVI in 16, 24 or 32 bpp format is supported.



- ✓ TXT - list of frames. This is a test file, each line of which specifies the name of the image file of the next frame (it is allowed to specify the full path) and, via semicolon, the duration of displaying this frame in milliseconds. If no time is specified, the duration of the frame display is equal to the duration of one field of the selected video mode. The same file formats are supported as for images. It is recommended to use the same image size for all frames.

An example of a simple animation file of 5 frames with a total duration of one second:

```
frame_001.png;100
frame_002.png;100
frame_003.png;100
frame_004.png;100
frame_005.png;60
```

The frame size is automatically selected equal to the image size (for animation - the size of the first frame). Further the frame size can be changed, and the image on the carpet pad will be stretched or compressed.

By default, the image file or animation is converted to the program's internal format and saved inside the page file. However, if the frame property is set to link to an external file, the file will be imported each time the page file is opened. When you start the frame for playback, the program checks if the external file has changed, and if it has, it is imported again. The size of the frame will not change.

#### Text

A frame can contain text information, which is displayed on the carpet pad.

The text can be fixed or moving (horizontal ticker or vertical bar).

The text consists of paragraphs, each of which can be left/right aligned or centered in the frame. Indentation and line spacing can be set for a paragraph. The ticker text always consists of only one paragraph.

For text output, TrueType or OpenType fonts installed in Windows are used.

To simplify the transfer of page files from one computer to another, it is recommended to use standard fonts, however, if necessary, you can install any font in Windows and the program will allow you to use it.

When the program is running, the ClearType font smoothing mode is disabled (if it was enabled).

For each character, word, sentence or all text in the frame you can separately set: font and its size, color of text and background under it, lettering (bold, italic, underlined), height position (upper or lower index). If the background under the letters is not set, the text is displayed on a transparent background. Text transparency is set by a separate property (0% - 100%). The text transparency is not related to the underlying transparency.

You can also enable the drop shadow property for all text in the frame. The text can have either a black border or one of three shadow options. For this feature to work properly, the background under the text must be transparent. Running line allows you to display a single text line, which can be longer than the width of the frame. If the looping property is enabled, the text of the running line will be constantly repeated, otherwise the movement will stop as soon as the last character of the line appears on the screen. If the start from frame edge property is enabled, the frame will be empty at first and the crawl



text will appear from the right edge of the frame. If this property is off, the ticker text will appear immediately from the left edge of the frame. The reverse property reverses the direction of the crawl to the opposite direction.

The "Drum" displays formatted text, the height of which can be greater than the height of the frame. The options are the same as for the crawl line, but the direction of movement is vertical.

The speed of the crawl line and drum scrolling can be set in conventional units from 1 (the slowest) to 40 (the fastest).

The length of a simple crawl line and the height of the drum text is limited to 30000 pixels, for different font sizes this is a different number of characters. Any combination of frames with fixed text, tickers and drums with any speed is allowed on the page. It is important to remember that the more complex objects on the page, the more load on the processor and video adapter, for complex graphics may require a more powerful computer.

### **Text source**

The simplest option for the frame text source is manually typed text. Such text is not changed after you finish editing. For large volumes of text it is recommended to use external text files.

Using a text source allows you to separate the tasks of design (done in the TitleMaster program), and text preparation (can be prepared by another operator on another computer).

To replace the text in the frame, TitleMaster uses templates. A template is a certain combination of characters, beginning and ending with the percent (%) symbol. The basic template is %1%, it will be replaced with the entire contents of the TXT file, the current clock or timer reading. The text formatting (font, size, color, etc.) will remain the same as the template. All other characters in the frame text will not change.

For CSV files, there can be as many templates as there are columns in the file. The %1% template is replaced with the contents of the first column, %2% is replaced with the contents of the second column, etc.

When working with TXT files, the length of the ticker is limited, so for large files it is recommended to split the text into several lines of no more than 1000 characters each and rename the file to .CSV.

### **Text files**

The source of text can be an external text file, in TXT format (simply formatted or unformatted text) or CSV format (columns of text separated by semicolons or commas).

The program is able to load text files in different encodings:

- ✓ ANSI/OEM is the most common. Besides English, only one additional language is supported, installed in Windows by default.
- ✓ UNICODE - this encoding allows you to store text in multiple languages in a single file. The standard Windows editor Notepad can save files in UNICODE encoding.
- ✓ UTF-8 - this encoding has the same features as UNICODE and is more commonly used on the Internet.

If the file encoding is unknown, it is recommended to set the Auto mode.

For CSV files it is necessary to set the correct field separator. Usually in the Russian version of Microsoft Office a semicolon is used, and in the English version a comma is used. The delimiter after the text of the last column is not necessary.

If the text of any column uses a quotation mark (") or a delimiter symbol, the entire text of this column must be enclosed in quotation marks. Quotation marks used in the text must be duplicated:

```
Club Barcelona;1;Club Real;0 - incorrect!
"Club ""Barcelona"";1; "Club ""Real"";0 - correct!
```

The first line of a CSV file may contain column headers. If this property is enabled, templates instead of %1%, %2%, etc. should look like %header\_1%, %header\_2%, where header\_1, header\_2 is the text in the corresponding column of the first line of the file.

CSV files are processed differently for fixed text and crawl/drum.

For a crawl or reel, the file is read line by line, the patterns are replaced with the column values from the current line of the file, then the program proceeds to read the next line. If the motion is looped, after reading the last line, the program starts from the first line again.

For fixed text, the patterns are replaced with the column values from the first line of the file. If you set the frame display time and the repeat property, after the frame finishes playing, the program goes to the next line of the file. After reading the last line, the program starts from the first line again. This variant of displaying information is convenient for currency exchange rates or weather forecasts.

Let's consider an example of realizing a news ticker. Our CSV file will consist of three columns: section header, news text, separator. For section headlines only the first column is filled in, for the news itself only the second and third columns are filled in (except for the last news of the section). Here is an example of such a file:

```
Politics;;
;Political News 1;***
;Political News 2;***
;Political News 3;
Economy;;
;Economic News 1;***
;Economic News 2;
Finance;;
;Financial News 1;***
;Financial News 2;***
;Financial News 3;***
;Financial News 4
```

Let's add a simple text frame, specify our CSV file as the text source, enable the ticker and loop it. The text in the frame is used to set the format. It can look like this::



Fig. Example of text template for news ticker.

The %1% template will be replaced with values from the first column of the file. These will be section headings, white bold text on a red background. The %2% template will be replaced by the news text, and %3% will be the news separator. The font, size, color and lettering of the text for all templates can be different. If there is no text in the corresponding column, the template will simply be deleted.

The editor shows the result of importin the first line of a CSV file:



Fig. Example of CSV file display in the editor.

When we run the frame on playback, we will see something like this:



Fig. Running line on the screen.

For a better understanding of how the program works with CSV files, it is recommended to refer to the examples in the Examples folder. All news sources are formatted as CSV files.

For fixed text, the frame has a property to keep track of file changes. If it is enabled and the frame is playing, the program constantly checks if the file has changed. If there are changes, the text on the screen is instantly replaced with new text. This property is useful for displaying changing information such as temperature values, sports broadcast data, interactive voting system statistics, and so on.

The histogram scale property is intended for displaying statistics data. If it is enabled, the program expects the specified text file to contain a numeric value between 0 and 100. This number is interpreted as the percentage of filling of the histogram scale. If the height of the frame is greater than the width, the scale will be vertical, otherwise it will be horizontal. The text in the frame can be anything, it is shown on the screen as it is.

For a better understanding of how bar graphs work, it is recommended to refer to the examples in the Examples\Interactive folder.

The program also supports RTF files. This feature allows you to prepare text with full formatting (fonts, letter size and color, paragraph alignment, etc.) in an external text editor, such as Microsoft Word or OpenOffice Write. It should be remembered that font sizes for use in TitleMaster should be larger than for printing, it is recommended to use fonts of size 20 - 80. The content of the RTF file completely replaces the text in the frame.

### **Other sources**

In addition to substituting text from an external file, the program can automatically generate clock or timer values. The clock and timer are output as fixed text only, they cannot be used in ticker and drum.

### **Clock**

The clock always shows the current time of the computer. The format of the date and time output can be set in the clock format property by selecting one of the ready-made formats or by defining your own. By default, the clock is output in the format %H:%M - HH:MM.

The format string can contain substitutions, they start with the percent (%) symbol and are replaced by the current date and time values. The names of days of the week and months are displayed in the language set in the Windows user settings. Possible substitution options:

<b>Substitution characters</b>	<b>Value</b>
%H	Clock in 24-hour format (00 - 24)
%I	Hours in 12-hour format (01 - 12)
%M	Minutes (00 - 59)
%S	Seconds (00 - 59)
%p	AM/PM indicator for 12-hour format
%d	Day of the month (01 - 31)
%m	Month (01 - 12)
%b	Abbreviated month name
%B	Full month name
%y	Last two digits of the current year (00 - 99)
%Y	Year, four digits
%a	Abbreviated name of the day of the week
%A	Full name of the day of the week
%c	Date and time in the format specified by the current Windows language settings.
%x	Date in the format specified by the current Windows language settings.
%X	Time in the format specified by the current Windows language settings.
%j	Day of the year (001 - 366)
%W	Week of the year (01 - 53)
%w	Day of the week (0 - 6)
%z, %Z	Time zone name
%%	Percent symbol

All other characters of the format string are output unchanged.

For example, a format string: Current time: %H:%M:%S will generate the following text: Current time: 12:00:30.

### **Timer**

The timer counts the time from the moment the frame starts playing. The timer can count up (from zero to the preset value, when it reaches zero, the timer stops) or down (from the preset value to zero, when it reaches zero, the timer stops). If frame playback is paused (pause), the timer also stops. The number of timers per page is unlimited.

You can specify the output format in the timer format property by selecting one of the ready-made formats or by defining your own. By default, the timer is output in the format %H:%M:%S - HH:MM:SS. The timer resolution is one thousandth of a second, but the maximum refresh rate is the same as the frame rate of the selected video mode (50 - 60 Hz).

The format string can contain substitutions, they start with the percent (%) symbol and are replaced by the current timer value. Possible substitution options:

<b>Substitution characters</b>	<b>Value</b>
%H	Hours (00 - 24)
%M	Minutes (00 - 59)
%S	Seconds (00 - 59)
%d	Tenths of seconds (0 - 9)
%h	Hundredths of a second (00 - 99)
%m	Thousandths of a second (000 - 999)
%s to end)	Total number of seconds from start (or
%%	Percent symbol.

All other characters of the format string are output unchanged.

For example, a format string: Remaining: %H:%M:%S will generate the following text: Remaining: 00:02:45

### **Playing back frames**

Each frame is a separate graphic item and can be displayed independently of the others. Frames can only be played back when HDMI output or preview mode is enabled. Launching a frame for playback (using a button on the toolbar, a menu command, or a specific keyboard shortcut: Ctlt+F5 for the current frame, F5 for all frames) starts its life cycle. It consists of the following phases:

- ✓ Display delay - a specified time elapses before the next phase starts. This property can be useful for synchronizing the appearance of several frames that depend on each other.
- ✓ Appearance - you can specify the effect of appearance and its duration. Movement of the ticker or drum, animation of the backing starts already in this phase.
- ✓ Frame display is the main phase. Its duration can be set manually, not limited at all, or determined automatically (for a moving ticker or drum without text looping).
- ✓ Disappearance - you can set the effect of frame disappearance and its duration.

The duration of each phase is set in seconds and thousandths (for example: 1,500) and can be zero. During playback, the phase duration is rounded to the whole number of frames of the selected video mode.

The main types of appearance effects:

- ✓ No effect - the frame just appears at the specified location. If the action time is set and the property is smooth - the frame appears gradually.
- ✓ Move out - the frame "moves out" from the specified point.
- ✓ Enlarge - the frame enlarges from the point to its full size.
- ✓ Appearance - a curtain moving over the frame opens it.

Disappearance effects work in the same way, but in the opposite direction.

If the smooth property is enabled in the Appearance effect, the transparency of the background and text changes smoothly from fully transparent to the specified transparency for the duration of the effect. In the disappearance effect, the transparency changes from preset to fully transparent.

If the repeat property is set in the frame properties, the whole cycle is repeated from the beginning.

Once a frame is started for playback, it can be controlled manually, using toolbar buttons, menu commands, and keys. Available commands:

- ✓ The Pause command pauses playback, motion and animation freeze on the current frame, and the frame countdown stops. A repeat command continues playback.
- ✓ The End command puts the frame into the disappear phase.
- ✓ The Stop command immediately removes the frame from the screen.

Any change of the frame (text editing, changing its properties, position, size, deletion) stops its playback.

### **Managing frames**

There are several ways to control frame playback:

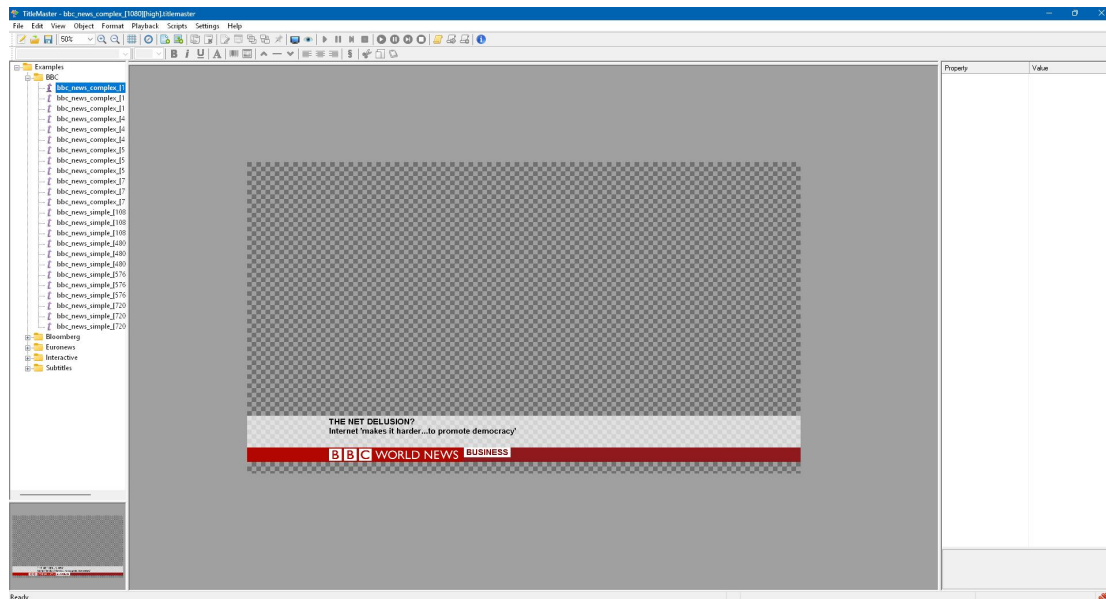
Manually - double-clicking with the left mouse button on a frame starts it on playback. If the frame is already playing - it is put into the disappear phase. Playback of the currently selected frame can be controlled by commands of the main menu, context menu (called by right mouse button), or by buttons on the toolbar. Frames can be combined into groups, the name of the group is set in the frame properties. Any control command given to one of the frames in the group affects all frames in the group.

By pressing the keyboard shortcut - in the frame properties you can specify one of the combinations from the Ctrl+0 - Ctrl+9 or Alt+0 - Alt+9 ranges. If you press this combination in the program window, the frame is started for playback. If the frame is already being played back, - it is switched to the disappearance phase. You can assign the same key combination to several frames and they will be controlled simultaneously. Group control does not work in this case.

By pressing a certain button on the mixer remote control - for this function to work, the mixer and the computer must be connected to the same local network, and the IP address of the mixer must be specified in the program settings. When you press the button on the remote control, the frame starts playing. If the frame is already playing - it is switched to the fade out phase. You can assign the same button to several frames and they will be controlled simultaneously. Group control does not work in this case.

### **Main program window**

The main program window consists of the standard controls (menu, toolbar), the editor window (in the center), the quick access panel (on the left), the properties panel (on the right) and the status bar.



## Editor window

The editor window shows the view and status of the current page. Convenient display scale for the selected video mode can be selected from the list (100% - 25%) or selected by buttons Zoom in Ctrl + Plus / Zoom out Ctrl + Minus on the control panel.

To select a frame, click on it with the left mouse button. The properties of the selected frame appear in the panel on the right. Another way to change them is through the Properties dialog box. You can use the Tab (forward) key or the Shift-Tab (backward) combination to cycle through the frame selection. This can be useful if the frames cover each other.

The color of the frame border indicates its current state:

**green** - frame is playing

**yellow** - paused

**red** - external file access error

In addition, the currently selected frame is highlighted with a contrasting border.

To change the position of the selected frame, you should pull any point inside it with the mouse. The cursor looks like a crosshair. If you move the mouse to any of the corners or centers of the frame sides, the cursor changes to a double arrow. By pulling the mouse you can resize the frame to the desired size. The cursor keys allow you to change the position of the selected frame, and pressing the Shift key changes the size. For more convenient positioning it is recommended to turn on the Snap to grid function in the View menu.



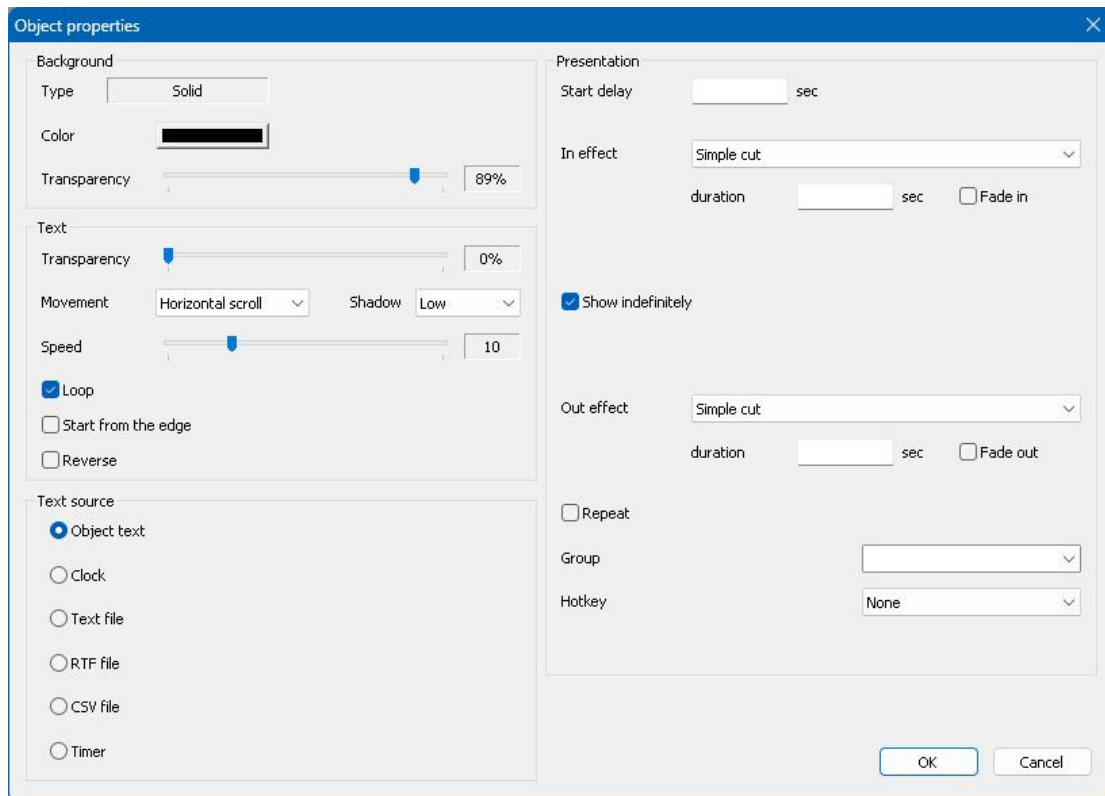


Fig. The Frame Properties dialog box

The mutual position of frames can be changed with the commands **Foreground Ctrl+Up** and **Background Ctrl+Down**.  
 If locking is enabled, you cannot move the frame and change its size.  
 Standard editing operations are available for working with frames: **Cut Ctrl+X**, **Copy Ctrl+C**, **Paste Ctrl+V**, **Delete** and **Clone**. There is a possibility to undo up to hundred last changes **Ctrl+Z**.  
 The right mouse button displays a context menu for quick access to frequently used operations.

To edit the text in the frame, press **Enter**. In this mode, a full-featured text editor with the usual features is opened inside the frame: you can change text size and font, paragraph formatting, text and background color, etc.

#### Quick access panel

On the left side of the main window is the **Quick Access Toolbar**. It displays the file names of pages and scripts located in the working folder of the program. By default this folder is: `Documents\TitleMaster`, but it can be changed in the settings.

The quick access panel allows you to double-click the mouse to open and/or play pre-created page files and scripts. The right mouse button displays the context menu.

Context menu commands for page files:

#### **Context menu commands for page files:**

- ✓ Load - similar to the File - Open menu.

- ✓ Add frames to current page - first all frames that are not currently playing and do not have the Lock sign are removed from the current page. Frames from the file are added on top. This command makes it possible to load pre-prepared titles without disabling, for example, the ticker and clock.
- ✓ Load and play - similar to the Load command, but after loading all frames are started for playback.
- ✓ Add frames to current page and play - similar to the Add frames to current page command, but after loading all frames are started for playback.
- ✓ Open in editor - start another copy of the program in the editor mode and load the page file in it.
- ✓ Rename - rename the page file.

#### **Context menu commands for scripts:**

- ✓ Load and play - load the script file, after loading it, start executing it if possible.
- ✓ Open in editor - load the script file and open the editor.
- ✓ Rename - rename the scenario file.

#### **Properties panel**

The Frame Properties panel is on the right side and allows you to quickly change any property of the selected frame. The property list duplicates the Frame Properties window.

#### **Status Bar**

The status bar displays information about the current status of the HDMI output and preview mode. If a frame is selected in the Editor window, its coordinates and size are displayed. It also displays information about the current script and its progress.

#### **Preview mode**

This mode (F9 key) allows you to evaluate the graphics output (position of frames, speed and content of tickers, etc.) without connecting a mixer. Graphics are always superimposed on a black field. The size of the preview window can be changed. Preview and HDMI output cannot work at the same time!

#### **Editor Mode**

If you need to make quick changes to a page file while on-air, you can open a new copy of the program in Editor mode. In this mode, all operations (including preview mode) are available except for outputting the signal to the HDMI output. The editor can be launched either from the group in the Start menu, or by selecting a page file in the quick access panel and right-clicking Open in Editor. Several copies of the editor can be launched simultaneously.

#### **Scripts**

A script is a sequence of actions with page files and frames. Possible actions:

- ✓ Load specified page file - all frames on the current page are stopped and deleted, then the specified file is loaded. Frames are not automatically started for playback.

- ✓ Add frames from page file - All frames on the current page that are not currently playing and do not have a Lock sign are removed from the current page. Frames from the file are added on top.
- ✓ Playback control - you can control all frames on the page, or only a specific group of frames.
- ✓ Delete frames - you can delete all frames, or only a specific group of frames.
- ✓ Wait for playback to complete - the script will move to the next action only when all frames or frames of a specified group have finished playing.
- ✓ Pause - the script execution is paused for the specified number of seconds.

If the looping checkbox is selected, after the last action finishes playing, the script goes to the first action again. This mode works only if there are wait commands in the script.

Buttons on the control panel or menu commands allow you to start and stop the current scenario. If there is no script, the program will offer to load it from a file. To modify and save scenario files, there is the Scenario Editor.

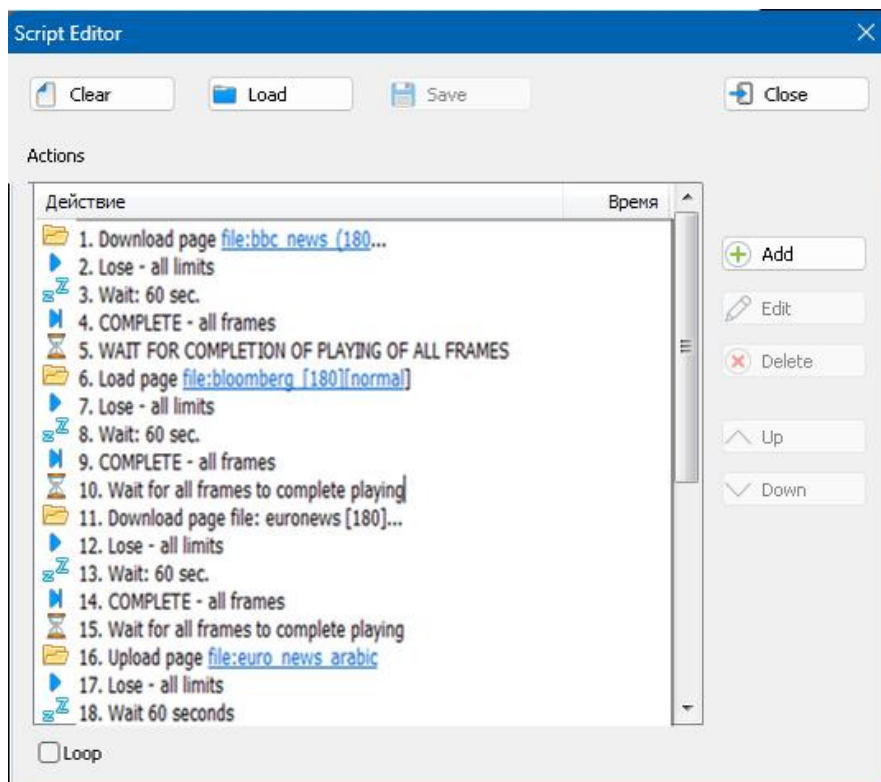


Fig. Scenario editor window

Prerequisites to run the script:

- ✓ HDMI output or preview mode is enabled
- ✓ there are no unsaved changes to the current page

Script execution stops if any error is detected, if HDMI output (or preview mode) is turned off, if the user manually changes something on the current page or loads a page file. Script execution also stops when any dialog box

(including the script editor window) is opened. During script execution, you can manually control frame playback (start, stop, etc.).

**Information about the scenario progress (name, total number of actions and current action) is displayed in the status bar.**

### Automation

The Automation window allows you to bind the execution of scripts to certain events. If such an event occurs and the conditions for launching it are met, the program loads the script file and starts its execution. If a script is already running at that moment, it stops.



Fig. Automation window

### Types of events:

- ✓ TitleMaster program startup - this event is always the first in the list, it cannot be deleted. In order for the specified file to be executed, the Enable HDMI output at program start option must be enabled in the program settings.
- ✓ Start at a specified time - you must specify the start time to the nearest second. You can choose either a one-time start, in which case you need to specify the date, or daily. In the latter case, you can choose which days of the week the script will be launched.
- ✓ Key combination - you should specify one of the combinations from the Ctrl+0 - Ctrl+9 or Alt+0 - Alt+9 ranges. When this combination is pressed, the script execution starts in the program window. If the checkbox acts globally is selected, the selected keyboard shortcut will act when pressed in any program! If the same key combination is specified for calling a scenario and for starting a frame, the scenario call takes precedence.
- ✓ Pressing a certain button on the mixer remote control - for this function to work, the mixer and the computer must be connected to the same local network, and the IP address of the mixer must be specified in the program

settings. If one and the same button is specified for the script call and for the frame start, the script call has priority.

All types of events, except program start, can be combined. The script will be started when any of the events specified for it occurs.